

The energy sector in Barcelona and Catalonia



Generalitat de Catalunya Catalonia Investment Agency

www.catalonia.com

With headquarters in Barcelona, an office in Madrid and branches in New York and Tokyo, the Catalonia Investment Agency provides advisory services and assistance adapted to the needs of companies interested in setting up or expanding their facilities and investments in Catalonia.

Barcelona City Council Economic Promotion

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Economic Promotion is a department of the City Council that is dedicated to promoting Barcelona as an attractive place for businesses and helping and giving support to companies, professionals and institutions that want to set up or do businesses in the city.

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22@Barcelona is one of the strategic projects of the city of Barcelona. In the downtown neighbourhood of Poble Nou, a space has been designed so companies and institutions from the Media, Medical Technologies, ICT and energy sectors can interact with knowledge centres like universities or R&D centres.

Barcelona Chamber of Commerce

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Barcelona Chamber of Commerce represents companies of the city of Barcelona. Through its personalised company services and its actions it helps promote economic and business activity in the country and for each of its companies.

Presentation

Catalonia, and its capital Barcelona, have always been an open, welcoming land. Over the course of history, many peoples have passed through it, and almost all have set down roots there. This has made Catalonia a land which is hospitable, tolerant, dynamic and open to all that is new.

Currently, Catalonia and Barcelona are one of Europe's leading economic hubs. The driving force behind the Spanish economy, the Catalonia of the 21st century is an innovative country boasting a highly-qualified workforce, an enviable geographic location (in the heart of Europe and connected with the rest of the world through its Mediterranean port and its international airports) and world-class infrastructures that attract investments year after year.

It is a pleasure for us to present this economic dossier, which provides an insight into one of Catalonia's, and Barcelona's, leading economic sectors, in terms of its weight in the economy, its relative weight in comparison with other European regions and for the support it is receiving from businesses, universities and research centres: the energy sector. The result of a partnership between four top institutions in the economy of the city of Barcelona and of Catalonia, this dossier describes everything that Catalonia, an entrepreneurial country that is a leader in this sector of the economy, can offer your business.

Please do not hesitate to ask us for any advice on or help with your investment.




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Barcelona, located on the shores of the Mediterranean in North-eastern Spain, is a major European metropolis and lies at the heart of a large metropolitan area of more than 217 municipalities, home to 4.6 million inhabitants. It is the economic, cultural and administrative capital of Catalonia and stands at the head of an emerging Southern European economic activity area of more than 17 million inhabitants and more than 800,000 businesses. This Euro-Mediterranean region, which includes the Balearic Island, Valencia, Aragon and South-eastern France, is focused towards new strategic, competitive and international sectors, and is becoming internationally consolidated as one of Europe's main metropolises.



■ Barcelona
■ Catalonia
■ Euro-Mediterranean region

We can find the basis of economic growth, which has become very relevant in last years, in a metropolis with a polycentric business structure which is both diversified economically and that facilitates its role as an incubator of new ideas, companies and products.

When we consider the distribution of the gross added value according to different branches of activity, Catalonia is, as in the case of industry, the region with most weight in the Spanish market (25%), and with respect to the service industry it occupies the second position in the national gross added value generated (18% of the total). In the region, those companies in industrial sectors with high and medium-high technology content and services based on knowledge make up 28.55% of the State total.

On the other hand, the index of entrepreneurship in Catalonia for the year 2005 is around 6.1%, a figure which is superior to the Spanish and European averages, according to the Global Entrepreneurship Monitor (GEM), 2005.

The international economic activity of the area of Barcelona gets a special boost from Fira trade fair, the Port, the Airport, the Free Trade Consortium, the Consortium of Barcelona Tourism Board and the new innovation technology districts. In this last aspect, and given the fact that innovation is the key to developing competitiveness, productivity and the internationalisation of companies, then we can see that the energy sector is one of the key sectors for Barcelona and Catalonia.

Barcelona and its metropolitan area welcome the seat of the most important companies of the Spanish energy sector, as well as the greatest concentration of companies of renewable energies of the Spanish state. The city has become one of Spain's benchmarks, with real examples that run from the 22@Barcelona district, the technology and innovation district par excellence, to extensive business networks of leading service companies, a deep-rooted entrepreneurial spirit and a long tradition in the teaching of energy sciences and its business practice.

Regarding the availability of human resources, in the last few years Barcelona has increased resources in education in new technologies as well as in infrastructure for research. The city has prestigious universities, centres of research that are highly-prepared, laboratories for R&D, as well as intermediary institutions that facilitate the development of technology based projects that are motors of new initiatives in the digital industry through the transfer of knowledge.

Barcelona offers a variety of elements that make it attractive for living, working, and business. The city is today an interesting place for new economic activities. Some good reasons to invest here are listed below.

01 Strategic geographical location

Two hours from France and one day from the main European cities by land. Gateway to the South of Europe, it boasts a port, airport, free trade zone, logistics park, international trade fair, and a city centre which is located within a five kilometre radius.

02 Complete transport infrastructure

Network of motorways connected to Europe, Europe's fastest growing airport, the top port in Spain and the biggest port in the Mediterranean in terms of container traffic; dense network of metro, railways, buses, and the arrival of the High Speed Train in 2007 with a connection into the TGV European network in 2009.

03 Centre of a large, dynamic, and varied economic area

Greater Barcelona has 4.6 million inhabitants. The city is the capital of Catalonia, which has 7 million inhabitants, and is at the centre of the Mediterranean Rim, a large economic area with 18 million inhabitants. It accounts for 70% of Catalonia's GDP and had a growth rate of 3.1% GDP in 2004, above the Spanish and European averages. It is the sixth most important European urban agglomeration and the fifth in terms of industrial concentration in Europe.

04 Successful foreign investment

Fourth-best city in Europe for business*, the city accounts for about 20% of the annual foreign investment in Spain. There are 2,700 foreign-owned companies here with a 97% level of investment satisfaction. Barcelona has also consolidated itself as a centre for multinationals' European divisions.

05 Recognised international position

Barcelona is placed highly in different international rankings, which speak highly of its urban environment, its capacity to attract foreign capital, its enterprising character, and its quality of life.

06 Human Resources prepared for the future

Ethically responsible, with high productivity -one of the highest in Europe according to the OECD-, 5 public universities, 2 private universities, 4 business schools: ESADE, IESE, EADA, IESKA; 27 international schools, extensive penetration of new technologies, a character favouring innovation and creativity.

07 Excellent quality of life

Europe's top city in terms of quality of life*. Stable climate, sun, beaches skiing, splendid culture and leisure offer, network of 4,500 educational institutions, modern and accessible health service. Easy to get around with public transport. System of nature parks surrounding the city.

08 Large urban projects for the future

Transformation of 1,000 ha and 7 million m² of build surface area. Llobregat area: stands for logistics and internationalisation, with enlargements to the port and airport; the Besòs area: urban renovation, sustainability, and research centres; Sagrera-Sant Andreu: the arrival of the High Speed Train; Poblenou 22@: the new technology and innovation district.

09 A competitive real estate offer

Extensive offer of office space, commercial premises and industrial units with an excellent price-quality relationship. The construction of housing is in an expansive phase.

10 Unique public-private collaboration

Barcelona city council and the Generalitat (Catalan government) support businesses: the success of the traditional public-private collaboration model has been the key in the transformation of Barcelona.

* According to the European Cities Monitor 2006 Research from Cushman & Wakefield

The energy sector in Barcelona and Catalonia

The energy sector forms a key part of any society's economic activities and its welfare, due both to its weight as a sector and, above all, to its strategic value, given that energy is a vital part of any industry, service or form of transport. For Barcelona and Catalonia in general, energy plays an essential role in their competitiveness and economic development.

Due to its industrial, enterprising culture, Catalonia boasts great know-how in the energy sector and carries out a large amount of energy-related research and development in fields such as renewable energies, air conditioning, natural cooling technologies and electricity monitoring and instrumentation.

The **2006-2015 Energy Plan**, promoted by the Catalan government via the Catalan Energy Institute (ICAEN), has taken the vital step to position the country as one of Europe's energy sector centres in the 21st century.

The Plan will develop an energy strategy involving the diversification of energy sources by promoting renewable energies, improving energy efficiency and savings, the creation of the required energy infrastructures and support for energy-related research, development and technological innovation.

For its part, the city of Barcelona has implemented the **Barcelona Energy Improvement Plan (PMEB)**. The PMEBS forms the generic framework for the City Council's work on energy policy and its environmental impact on the city. It includes an energy and environmental diagnosis of the Barcelona of today and future trends in the area (to 2010), which should allow for the forecasting of increases in energy consumption in the city and their repercussions, through a range of different scenarios. The Barcelona Energy Agency is responsible for developing the PMEBS.

Barcelona and Catalonia already have the key elements in place to successfully tackle the challenges of the future and to become, over the coming years, an international point of reference in the energy sector, which is key to the competitiveness and economic development of any territory:

- The firm support of the public administrations for the creation of a model of sustainable development, backing renewable energies, encouraging energy savings and efficiency and investing in energy infrastructures that ensure a balance between assuming growth in demand and sustainability.
- A culture of research and technological innovation currently present in the university and business sectors, supported and boosted by the creation of the *Parc de l'Energia* (Energy Park) and the ITER Project's Fusion for Energy agency, which should allow for the association of Barcelona and Catalonia with innovation and technology in the energy sector on an international level.
- A world-ranking, enterprising culture specialising in different market segments:
 1. The supply, distribution and sale of energy.
 2. The technology for and design and manufacture of renewable energies.
 3. An industrial sector producing capital goods for the energy sector.



The goal of this document is to provide an insight the basic features –current and future– of the energy sector in **Catalonia** and **Barcelona**, focusing around 10 strategic factors:

- 01 Promotion of renewable energies
- 02 Energy savings and efficiency
- 03 New energy infrastructures
- 04 Barcelona, a model for a city heading towards sustainability
- 05 Large energy sector operators in Catalonia
- 06 Businesses backing renewable energies
- 07 A consolidated presence of manufacturers of capital goods for the energy sector
- 08 A research and development culture
- 09 The *Parc de l'Energia*, sector project with a bright future
- 10 The ITER Project in Barcelona

10 reasons in favour of the energy sector

01 Promotion of renewable energies

The use of renewable energy sources is a priority for Catalonia, which is looking to position itself as leading world-wide hub in this sector.



The 2006-2015 Energy Plan establishes goals that go beyond the targets set by the EU. It is planned for the percentage contribution made by renewable energies to primary energy in Catalonia to progress from the 2.9% recorded in 2003 to **9.5% by 2015**. In this way, it not only meets the European target of doubling this figure, but plans to more than triple it. As far as the **generation of electrical energy** is concerned, it is planned for the percentage of renewable energies to reach 24.0% by 2015.

Within renewable energies, a particularly significant role is played by **biofuels and wind energy**:

- **Biofuels**, which are close to being introduced onto the market, are the source of renewable energy which has the greatest energy potential in the short and medium term. It is forecast that they will represent **28.6% of renewable energy consumption in Catalonia** thanks, above all, to the importance of biodiesel which, with consumption in excess of 870,000 tonnes, is forecast to replace 18% of motor vehicle diesel consumption.
- **Wind energy** is that which shows the greatest possibilities, since the associated technology is at the stage of developing its potential, now it has completed its R&D and market penetration stages. Therefore, achieving the best out of Catalonia's wind power potential will be one of the priorities of energy policy over the coming years. It is forecast that the power capacity of Catalonia's wind farms will increase significantly, taking into account the different studies of its potential and known initiatives. There are plans for the installation of 3,500 MW and for **25.7% of renewable energy consumption** to be sources from wind farms.



Other important sources of renewable energy include:

- **Hydroelectric energy**: one of the main source of energy, representing **17.9% of renewable energy consumption** in Catalonia.
- **Biomass**: as part of the promotion of the identification and development of biomass energy generation stations, biomass and biogas will together contribute some 512.1 TPEC of energy by 2015, or **17.4% of total energy from renewable sources**.
- **Solar thermal collectors**: the goal here is to reach 1,250,000 square metres of collectors.
- **Photovoltaic modules**: with a target of 100 MW, the technological development of this energy source is in full flow. Given the importance that this energy source may have in the future, it is considered vital to continue supporting this development.

02 Energy savings and efficiency

The Energy Savings and Efficiency Strategy is one of the core elements of the Energy Policy. This strategy includes the creation of a range of actions to open up significant new opportunities for sector businesses. The goal of this new policy is a sizeable reduction in energy consumption across all sectors: domestic, tertiary, industrial, energy transportation and distribution, and transport.

Its **strategic lines** are as follows:

- Energy savings and efficiency education, training and awareness raising.
- Activation of an energy savings and efficiency market.
- Encouragement of energy savings and efficiency-friendly behaviour and actions.
- Executive action by the public administration: legal regulation, inspection and verification.
- Creation of a technology research and development centre aimed specifically at energy savings and efficiency.

The **basic actions**, by sector, are as follows:

- Energy transformation: technological restructuring of the asset park and reduction in losses during generation, transportation and distribution.
- Private transport (renewal of vehicles, efficient choice of means of transport and efficient driving) and public transport (investment in infrastructures and service improvements).
- Primary: Renewal of machinery and efficient industry techniques.
- Industrial: speeding up planned changes and technical advice.
- Services: Outsourcing of teams and technical advice.
- Domestic and others: labelling, regulations and signalling of inductive pricing.
- Generic: automation of information management and dissemination.



03 Basic energy infrastructures

Another important priority for Catalonia is the development of the infrastructures required to meet the increase in demand for energy over coming years, whilst taking account of the use of renewable sources and energy savings and efficiency:



- **Combined cycle power plants:** the progressive replacement of the three nuclear power plants currently operational in Catalonia is based on conventional plants. Of these, the most appropriate technology is the combined cycle type, fed by natural gas, which has a low environmental impact due to its great efficiency.
Catalonia currently boasts four combined cycle plants, with a total capacity of 1,200 MW. Additionally, two further plants of 400 MW each are authorised and under construction, and are planned to come on line in 2007. Three additional 400 MW plants are planned by 2015.
- **Wind farms:** it is forecast that the power capacity of Catalonia's wind farms will increase significantly to reach the 3,500 MW mark.

By 2015, it is forecast that, taking into account the new infrastructures mentioned above, the power capacity of electricity power plants will be as follows:

Power station type	2003	2015
Ordinary regime	8,210.3	9,350.3
Nuclear	3,146.8	3,146.8
Hydro-electric	2,088.3	2,088.3
Coal	160.0	0.0
Oil/gas	1,235.9	535.9
Combined cycles	1,579.3	3,579.3
Special regime	1,653.8	6,215.0
Hydro-electric	231.9	386.5
Cogeneration	1,139.1	1,564.0
Wind	86.7	3,500.4
Photovoltaic	2.2	100.0
Waste reduction	115.8	366.2
Other	78.1	297.9
Total power capacity	9,864.1	15,565.3

04 Barcelona: a model for a city moving towards sustainability

Barcelona is positioning itself as one of Europe's leading energy sector capitals. In addition to benefiting from the presence of important energy companies and attracting investments from around the world to provide a response to the sector's objectives over coming decades, Barcelona is implementing an energy plan with the goal of increasing its importance in the sector.



The **Barcelona Energy Improvement Plan (PMEB)** covers a range of local measures aimed at achieving a more sustainable city model. It brings together 55 projects evaluated from a energy, environment and economic viewpoint, which tackle different levels of action, from regulations, aid for installations, training and education programmes to the creation of Barcelona Local Energy Agency Consortium, the body which will manage the PMEB itself.

The **Barcelona Local Energy Agency Consortium** is made up of the authorities directly involved (at their particular level) in energy and environmental management. Its mission is to promote the position of Barcelona as an example of how to deal with energy issues and their environmental repercussions. It works to ensure that, through consensus and participation, the city achieves optimal usage and management of local energy resources, and the promotion of a quality, rational and sustainable demand for energy.

All this should permit Barcelona to comply with the environmental and energy-related commitments it has taken on at both a local level (as contemplated in the Energy Plan and Agenda 21) and an international one (resulting from the accords at the Johannesburg, Kyoto, Aalborg and Rio summits).



The Agency's work aims to achieve an improvement in environmental quality and sustainable development of the city based on the promotion of energy savings and efficiency, the awareness and use of renewable energies and the optimisation of the quality of services associated with this sector.

The **Agency's main goals** are:

1. To guarantee the implementation of the Energy Improvement Plan in the city, with the outlook of a new energy and environmental panorama in 2010.
2. To encourage energy savings and efficiency.
3. To promote the use of local sources of renewable energy.
4. To progress in improving the quality of energy services.

05 Large energy operators in Catalonia

Barcelona is home to one of the world's most important energy services multinationals: Gas Natural.

The **Gas Natural Group** is an energy services multinational whose activities focus on the supply, distribution and commercialisation of natural gas in Spain, Latin America, Italy and France, where it has more than 10 million customers.

The chief strategic lines of action of the Group are based on four central planks:

1. Flexibility and diversification in gas supplies and to have its own gas supply.
2. To develop the electricity business in Spain and Puerto Rico.
3. To maintain its leadership of the gas distribution market in Spain and Latin America.
4. To consolidate its leadership in multi-product sales in Spain.

Today, the Gas Natural Group is now the leading natural gas distribution operator in Latin America, where half its customers are located in Argentina, Brazil, Colombia and Mexico. Additionally, the Group has commenced natural gas production after being awarded, together with Repsol YPF in Algeria, a gas prospecting project and an integrated liquefied natural gas project which will enable it to have its own reserves for the first time.

In the electricity generation business, the Group strategy focuses on having a balanced, competitive and environmentally-friendly generation mix, in accordance with the objectives contained in the Kyoto Protocol. The Group's current generation programme comprises a total of 1,600 MW of installed capacity in combined cycles plus over 610 MW of gross wind power which will be increased over the coming years with more than 3,200 MW in combined cycles and over 1,228 MW in wind power.

Gas Natural's annual turnover stands at approximately 6,500 million euros. The group has a workforce of more than 6,500 spread across the three continents in which it is present.

FECSA-ENDESA is the first electric generation company in Spain and the first one to be privatized in Ibero-America. It also is the first commercial distributor of energy in Catalonia.

IBERDROLA, also present in Catalonia, it is one of the first energy operators of the world and a worldwide leader in the production of Aeolian energy.

REPSOL, one of the ten largest oil companies in the world and currently the biggest private company in the energy sector in Latin America. In Catalonia, the company has several construction projects for biocombustible plants.

RED ELÉCTRICA, electric transmission and distribution company of the State, with assets and offices in Catalonia.

PRYSMIAN: company is the worldwide leader in the manufacture of electrical conductors and communication equipment, based in Catalonia.

06 Businesses backing renewable energy companies

Catalonia has played a pioneering role in the creation of companies that have strongly supported development of the renewable energies sector. One particularly illustrative examples of this is provided by Ecotècnia.

ECOTÈCNIA, based in Barcelona, has carried been active in the renewable energies sector since its very beginnings in 1981.

Since 1999, Ecotècnia has formed part of Mondragón Corporación Cooperativa (MCC).

Today, it develops technology and designs, manufactures and operates wind turbines, building turnkey wind farms for its customers, and also carries out solar energy installations. At the same time, Ecotècnia has decided to invest in the technological development of photovoltaic energy, considering it to be a strategic growth element. In this sector, it develops its own projects and carries out all manner of turnkey projects in the fields of autonomous hybrid rural electrification systems and photovoltaic plants connected to the grid.

The company's annual turnover is around 200 million euros and it has a workforce of 700 employees.

Ecotècnia was recently acquired by the French Alstom group.

COPCISA, based in Terrassa, is a company that has moved from the construction to the energy sector, and is one of Catalonia's leading proponents of wind farms, with 400 MW of power capacity under development.

It has now decided to invest in solar thermal collector plants, which are based on a technology with a bright future and in which Spain has become a world leader.

ACCIONA is also a Spain-wide construction company which has undergone significant diversification into renewable energies. It is one of Catalonia's leading wind farm companies.

SOL3G a small company located in the el Vallès Technology Park, designs and manufactures new concepts in photovoltaic solar systems: concentration systems, which boast improved efficiency and performance.

VESTAS MEDITERRANEAN, a subsidiary of the Danish company VESTAS, world leader in the manufacture of wind turbines, which develops the Southern European and Mediterranean markets.

ECOFYS-ECOSTREAM the subsidiary of a Dutch renewable energies, sustainable building and energy efficiency consulting company. Also carries out the installation of thermal collector and photovoltaic solar energy systems.

07 A consolidated presence of manufacturers of capital assets for the energy sector

Due to its industrial, enterprising culture, Catalonia is home to important industrial companies manufacturing capital assets for the energy sector. Two significant examples are provided by:

a) Simon Holding

Founded in 1916, Simon Holding heads an industrial group of more than 20 companies, both local and international, present in more than 50 countries. Today, it employs a workforce of 2,500 persons, 1,300 in Spain and 1,200 abroad. Simon Holding's annual turnover exceeds 225 million euros.

Simon Holding holds important positions in the small electrical material and circuit protection, lighting, home automation, voice and data connections, ducting and electronics markets.

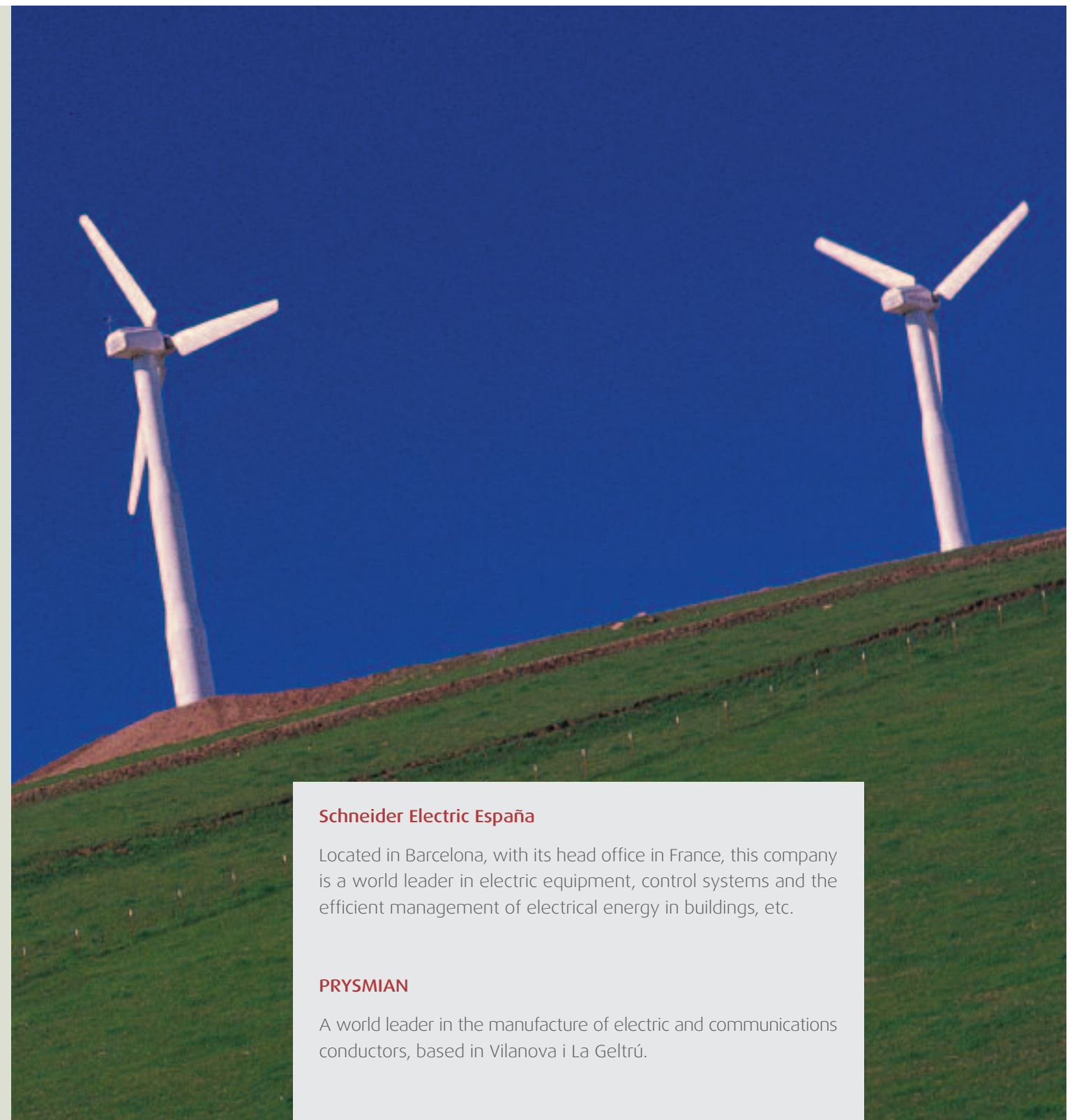
Simon Holding's annual investment plan totals approximately 25 million euros. Amongst other areas, investments are made in the launch of new products developed by its own R&D departments. 10% of the group's total workforce in Spain belong to the R&D Department.

b) Circutor

Since 1973, this company's activities have covered the design, manufacture and sale of industrial electrical protection, measuring, electric energy monitoring and reactive energy compensation equipment, with a highly innovative spirit and always in close collaboration with its customers.

Key features:

- Circutor is a company that is growing internationally, with a presence in 93 countries to which it exports some 50% of its production.
- The combined annual turnover of all the Group's companies is more than 70 million euros, and they employ between 630 and 640 workers.
- An R&D team composed of more than 50 engineers, designing new products to meet market requirements.
- Its own laboratory EMC/EMI test laboratory and a comprehensive range of calibration instruments to guarantee unbeatable quality.
- The provision of multi-sector solutions: from the generation, transportation and distribution of electrical energy, to its end consumption, including all manner of industries (car, textile, chemical, iron and steel, etc.) and service sectors (hotels, airports, public buildings, etc.).



Schneider Electric España

Located in Barcelona, with its head office in France, this company is a world leader in electric equipment, control systems and the efficient management of electrical energy in buildings, etc.

PRYSMIAN

A world leader in the manufacture of electric and communications conductors, based in Vilanova i La Geltrú.

08 A research and development culture

In recent years, Catalonia has witnessed a progressive increase in technology R&D in the energy sector. This increase is bringing about a growing convergence with the level of research and technological innovation taking place in the world's most advanced R&D countries.

One of the main goals of the Generalitat's Energy Plan is to stimulate energy-related technology research and development.

To this end, the Generalitat's government has supported the creation of the Catalan Energy Research Institute, IREC, with the goal of it becoming a centre of excellence in energy efficiency.

The Institute will also carry on significant activities in the field of renewable energies, advanced materials for energy and power electronics.

IREC's mission is to help increase industry's competitiveness through technology research and development: it thus has a twin (market oriented/pure research) outlook.

Other examples of already-existing research centres in Catalonia which carry on significant energy-related R&D:

a) The Reference Centre for Advanced Materials for Energy (CeRMAE)

This centre is made up of seven research groups. Its core lines of research are new materials, energy production methods and processes, energy storage and transportation materials, materials for the rational use of energy and materials for safety, efficiency and emission reductions in the use of energy.

b) The Centre for Technological Innovation in Static Inverters and Drives (CITCEA)

CITCEA is a research, development and technology transfer centre whose goal is to transfer innovation to industry and deliver solutions to the new requirements of the market, especially to SMEs.

CITCEA's activities are divided into three areas: mechatronics, energy and training.

1. **Mechatronics:** specialising in electrical and electronic equipment, power, microprocessor or DSP control and communications electronics, for carrying out mechatronics or automation applications.
2. **Energy:** an expert in energy innovation, in all electric sector-related activities and the supply of electrical energy, from its generation to its end consumption.
3. **Training.**

09 The *Parc de l'Energia*, a sector project with a bright future

One of the main strategic projects being executed by Barcelona and Catalonia is the *Parc de l'Energia* (Energy Park). This Park, covering a total of close to 25,000 square metres, will bring together teaching centres, R&D centres and energy businesses, creating a constant interaction between these three players within a framework of excellence for the energy sector.

The Catalan public administration, every one of Barcelona's universities and the business community are all supporting the *Parc de l'Energia*, with the following goals:

- To boost existing R&D infrastructures making it the site of the headquarters of the Catalan Energy Research Institute (IREC)
- To treat as a priority improving the competitiveness of related companies in the Energy Park, via participation in technological projects and in the transference of research results.
- To act in the market as an energy technological know-how and market hub, channelling and unifying those research lines that are considered strategic.
- To act as a node for participation in technological platforms and in the 7th EU Framework Programme.
- To encourage the physical presence in the Park of innovative energy sector companies.
- To create a nursery for companies arising from the technological development projects of the entities making up the Park and other associated projects.
- To develop a collaboration strategy with ICAEN, IDAE, CIEMAT and with the public authorities in general.
- To promote conformity certification and assessment services in the Park's areas of expertise.

The *Parc de l'Energia* will have its own research infrastructure, to be established in the Barcelona Technological Innovation Park (b_TEC), located between Barcelona and Sant Adrià del Besòs and alongside 22@Barcelona, the new business district in the centre of Barcelona.

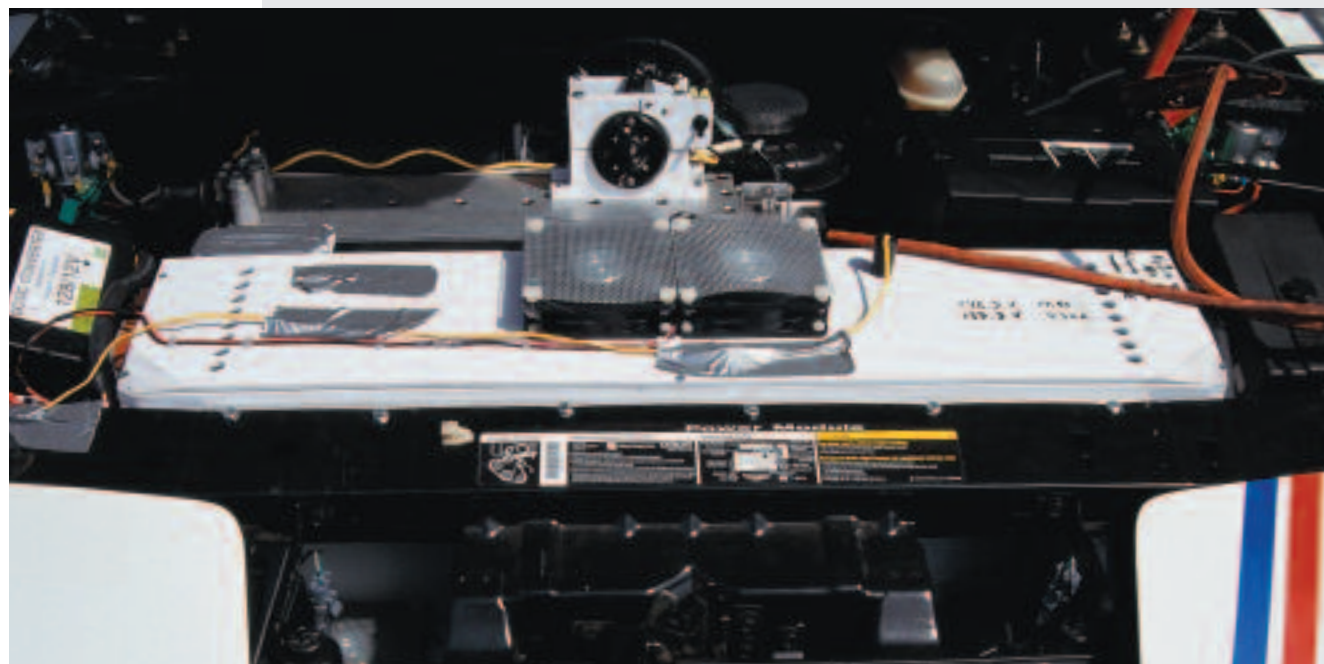
The *Parc de l'Energia* will provide a cluster bringing together, integrating and coordinating the know-how and innovation being created in Catalonia and Spain, as well as seeking contributions from leading international experiences.

10 The ITER Project in Barcelona

ITER is an international collaboration project for the development of nuclear fusion. Its mission is to demonstrate the scientific and technological viability of fusion for peaceful purposes. ITER will be the first fusion device to produce thermal energy at the level of an electricity power plant. It will constitute a major step forward for scientific progress and fusion technology. It will also be a key element in the strategy to demonstrate the viability of an electricity generating plant in a single experimental step.

The goal of the ITER project is to build a large experimental fusion reactor in the French city of Cadarache. However, Barcelona will be home to Fusion for Energy, the European agency charged with monitoring all construction, industrial contribution and development agreements for the project, meaning it will be managing funds of more than 2,000 million euros. This will create between 120 and 160 jobs, the majority of high-level technical nature. Its offices will be located within the *Parc de l'Energia*, and it will be one of the most important energy sector bodies in Barcelona and Catalunya.

One of the central features of this agency is that it will not only manage the ITER project, but will also provide a centre concentrating all of Spain's fusion research efforts, providing the possibility of creating very significant synergies.



Education centre

EADA School of Advanced Management and Administration
www.eada.edu

ESADE Business School
www.esade.edu

IESE Business School
www.iese.edu

UAB (Autonomous University of Barcelona)
www.uab.cat

UB (University of Barcelona)
www.ub.es

UIC (International University of Catalonia)
www.unica.edu

UOC (Open University of Catalonia)
www.uoc.edu

UPC (Politechnic University of Catalonia)
www.upc.es

UPF (University Pompeu Fabra)
www.upf.es

URL (University Ramon Llull)
www.url.cat

R&D+i and transfer of knowledge

Barcelona Supercomputing Centre
www.bsc.cat

Barcelona Digital Fundation
www.bcdigital.org

Network of Science and Technology Parks of Catalonia (XPCAT)
www.xpcat.net

Local organisms

Barcelona City Council – Economic Promotion
www.bcn.cat/barcelonabusiness

22@Barcelona
www.22barcelona.com

Barcelona Activa
www.barcelonaactiva.es

Industrial Pact for the Metropolitan Region of Barcelona
www.pacteind.org

Autonomic organisms

Catalan Energy Institute
www.icaen.net

CIDEM (Centre for Innovation and Business Development)
www.cidem.com

ACI (Catalan Agency for Investments)
www.catalonia.com

CIRIT (Inter Departamental Advice Board for Research and Technological Innovation)
www10.gencat.net/dursi/ca/re/cirit.htm

Catalan Foundation for Research and Innovation (FCRI)
www.fcr.es

Spanish Foundation for Science and Technology (FECYT)
www.fecyt.es

Environmental Forum Foundation
www.forumambiental.org

National organisms

CDTI (Centre for Industrial Technology Development)
www.cdti.es

CSIC (Upper Council for Scientific Investigations)
www.csic.es

Ministry of Education and Science
www.mec.es

Ministry of Industry, Tourism and Trade
www.mcyt.es

Red.es
www.red.es

Sources of financing

CIDEM (Centre for Innovation and Business Development)
www.cidem.com

Barcelona Emprèn
www.bcnempren.com

Catalana de Iniciativas
www.iniciatives.es

Catalan Institut for Finances
www.icfinances.com

Oficial Institut for Credit
www.ico.es

Avalis of Catalonia
www.avalis-srg.cat

ENISA (National Company for Innovation)
www.enisa.es

Entrepreneurial organisms

Barcelona Chamber of Commerce
www.cambrabcn.es

Spanish Association of Companies of Alternative Solar Energy
www.asensa.org

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